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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,433	12/28/2001	Young-Sang Byun	3430-0175P	4398

2292 7590 02/27/2003

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EXAMINER

DUONG, THOI V

ART UNIT PAPER NUMBER

2871

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/028,433

Applicant(s)

BYUN ET AL.

Examiner

Thoi V Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 ~~is/are~~ rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1, 2, 4-10, 13 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Gyoda (Pub. No. US 2002/0063842 A1).

As shown in Figs. 4, 6 and 7, Gyoda discloses a method of forming a liquid crystal layer 13 on a counter substrate 112A having a sealed pattern 14A, comprising (paragraphs 108-110, page 9):

preparing a liquid crystal material in a projecting portion consisting of a reservoir plate 53 filled with a liquid crystal material, a plurality of spaces 54, a nozzle plate 51 containing a plurality of orifices for discharging the liquid crystal from the space 54;

applying a vibration and pressure to the projecting portion so as to emit the liquid crystal material from the projecting portion; and

depositing the emitted liquid crystal material on the substrate,

wherein said nozzle plate adjusts the applied pressure for emitting the liquid crystal material;

wherein the liquid crystal material is emitted and deposited in a vacuum chamber (paragraph 98, page 8);

wherein the vibration is generated by a voltage applied to a resonator 59; and

wherein the generated vibration is transmitted to the projecting portion through a resonating plate 52.

As shown in Figs. 1 and 2, a color filter 16 having red, green and blue color pixels 16a and a black matrix 16b provided between the color pixels are formed on a counter substrate 12. Accordingly, it is clear that a sealed pattern 14 is formed over the black matrix on the counter substrate and the liquid crystal material start and stop is deposited on the black matrix (see also Figs. 4 and 5).

Gyoda also discloses an apparatus of forming a liquid crystal layer on a substrate having a seal pattern as shown in Figs. 6 and 7, comprising (paragraphs 108-110, page 9):

a projecting portion consisting of a reservoir plate 53 filled with a liquid crystal material, a plurality of spaces 54, a nozzle plate 51 containing a plurality of orifices for discharging the liquid crystal from the space 54;

a resonator 59 for generating a vibration; and

a resonating plate 52 for transmitting the vibration to the projecting portion.

wherein the nozzle plate adjusts the applied pressure for emitting the liquid crystal material; and

wherein voltage means are provided for generating vibration in the resonator.

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Finally, the apparatus further comprises a vacuum chamber for encompassing the projecting portion, the resonator and the resonating plate (paragraph 98, page 8).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gyoda (Pub. No. US 2002/0063842 A1) in view of Kawasumi et al. (USPN 5,978,065).


Gyoda discloses an apparatus of forming a liquid crystal layer that is basically the same as that recited in claims 3, 11 and 12 except for a stage for mounting the substrate and means for moving the stage. As shown in Figs. 11 and 12, Kawasumi discloses a manufacturing apparatus of a liquid crystal device having a stage 34 used for mounting a substrate and a driving mechanism comprising a driving source 36 and guiding rails 38 for driving the stage (col. 17, line 64 through col. 18, line 39). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of forming a liquid crystal layer on a substrate having a seal pattern of Gyoda with the teaching of Kawasumi by providing a stage for mounting the substrate and means for moving the stage so as to facilitate the manufacturing process.

**Conclusion**

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong  
02/21/2003



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